

AN
ESSAY

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On the CURE of the
HYDROCELE
OF THE
TUNICA VAGINALIS TESTIS.

By JOSEPH ELSE,

SURGEON to St. THOMAS'S HOSPITAL.

The SECOND EDITION, with ADDITIONS:
In which the Composition of the CAUSTIC, and the Method of applying it, are fully described.

LONDON:

Printed for JOHN WILKIE, at the Bible, in
St. Paul's Church-Yard.

M,DCC,LXXII.

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ON THE

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OF THE

TUNICA VAGINALIS TESTIS



BY J. O. F. S. S.

Surgeon to St. Thomas's Hospital

THE SECOND EDITION, WITH ADDITIONAL
IN WHICH THE COMPARISON OF THE CLINICAL AND THE
USE OF THE INSTRUMENTS IS EXPLAINED

LONDON:

Printed for John W. Parker, at the British

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P R E F A C E.

IT may appear superfluous, at this time, to publish an Essay upon the Hydrocele of the Tunica Vaginalis; as it has been treated of by so many eminent writers amongst the moderns, who have availed themselves of every thing valuable on the subject to be found in the antients. But whoever considers all the methods of cure prescribed in books, will find their several patrons are obliged to confess, that they are troublesome and uncertain, nay sometimes dangerous;

A 2

inasmuch

inſomuch that an author, whoſe character deſervedly ſtands high in the profeſſion, has the following words, when ſpeaking of this diſorder: “Upon
“ the whole it appears to me, from
“ what I can learn in the writings I
“ have examined, that there are not
“ yet a ſufficient quantity of obſer-
“ vations, to eſtabliſh an unexcepti-
“ onable method of performing this
“ operation *.”

If therefore a method of cure can be pointed out for this diſeaſe, which may be undertaken with eaſe and ſafety to the patient, I apprehend it will be an offering neither unacceptable nor uſeleſs to the Public. Such I eſteem that, which I recommend in the following ſheets. I

* Sharp's Critical Enquiry, 3d edit. p. 92.

pretend not to be the inventor ; nor can I with certainty say, who first brought it into use : but it has been long practised in St. Thomas's Hospital ; and all the merit I can claim, if there be any, is that I have considered, and endeavoured to explain the reasons, which render this process preferable to any other ; and, from the experience of several years, can add my own testimony to its ease, safety and efficacy.

Although it has been practised in the presence of so many witnesses, it appears however to be known to very few * ; and several reasons may be

* “ We should likewise have been informed of the
 “ different success from the use of caustics and the knife,
 “ both of which are recommended for the radical cure ;
 “ but there are few or no accounts of this nature.”
 Sharp's Critical Enquiry, 3d edit. p. 91.

given

given: why it has not been more spoken of: Thus, though the palliative cure is seen almost every day in a large hospital; yet the radical cure is by no means so frequent. The disease not being painful nor inconvenient till it comes to a certain size, and even then being capable of temporary relief, with so much ease by the lancet or trocar, makes many persons endure it, rather than submit to the trouble and confinement necessary for a radical cure: Again, the generality of those who have been witnesses to it, when performed, consisted of such persons, who attended the hospital only for a short time; and afterwards settled in the country, where they would have few opportunities of practising it; and perhaps not having
 seen

seen more than one or two cases, had not courage enough to adopt the method, because writers of great estimation had declared against the use of the caustic in general ; though the process now recommended is exceedingly different from what is described in books. But these impediments might, I am persuaded, have been overcome, and the knowledge of it rendered general, if those gentlemen, who were best qualified to give an account of it, could have conquered their aversion of submitting to the public eye their sentiments on this, and other subjects of the same nature.

To examine carefully into the opinions of the latest writers on this subject was absolutely necessary, both to

shew the inconveniencies of the methods they prescribe, and to answer any objections to what is now recommended, which might be drawn from their writings: In doing which, I have for the most part made use of their own words.

This must apologize for the number and length of the quotations. Where my opinion differs from those, for whom I have a deserved esteem, I hope I have expressed myself with that candour, which will shew that truth was the only object of my pursuit.

London, October 1769.

A N

AN ESSAY

On the CURE of the HYDROCELE

OF THE TUNICA VAGINALIS TESTIS.

THE Hydrocele of the Tunica Vaginalis is a preternatural accumulation of a watery fluid between that membrane and the Tunica Albuginea, which immediately invests the vascular substance of the Testis.

This disease is said to arise from a variety of causes. Too great laxity of the lymphatic vessels is assigned as one cause; a defect in the absorbent system as another; and a stimulus for a third:

B

perhaps

perhaps at different times all these may concur to form it. — I might add, that probably it may happen sometimes from the rupture of a lymphatic vessel. I have known some patients, who affirmed that they have sensibly felt something burst within the Scrotum ; after which a Hydrocele of the Tunica Vaginalis has begun to form *.

The celebrated professor Morgagni supposes the disease produced by Hydatids forming within the

* A gentleman had a Hernia Humoralis, for which he was attended by a surgeon, who, as he informed me, fomented him twice a day for a long time, but never suspended the Scrotum. The Testis for three months continued greatly enlarged, after which time it was reduced nearly to its natural size ; but as he was sitting one night in the gallery at the play, when the house was exceeding hot, he perceived something snap, as he expressed it, within the Scrotum, and thought himself immediately sensible of an extravasation on the inside : being much alarmed, he came out of the house, and examining the Scrotum, found it, as he had imagined, increased in size.— This swelling gradually advanced, produced a Hydrocele of the Tunica Vaginalis, for which I tapped him several times, and at last radically cured him by caustic.

In like manner patients are sometimes sensible of the ruptures of large sanguineous veins. See London Medical Observations, vol. 3d, art. 19.

Tunica Vaginalis, on the body of the Testis, and on the Epididymis; which bursting discharge their contents within the coat, and so produce the accumulation. The appearances, which Morgagni describes, and supposes to be the remains of ruptured Hydatids, I took notice of several Years ago in sound Testicles, where no Hydrocele had ever existed: from which time I have never failed seeing, and often demonstrating them in all the adult Testicles I have examined. And since the publication of his work, De Causis & Sedib. Morbor. I have looked for them in subjects of all ages, and have hitherto found them as constantly in infants, as adults.

The symptoms, by which this disease may be distinguished from others affecting the Scrotum, are described in so masterly a manner by the latest writers on this subject, particularly by our own countrymen*, that it is unnecessary for me to point them out. I will only observe, that no rule hitherto laid down will afford us an infallible criterion of its difference from some other disorders of the Scrotum. Hence surgeons of the very first rank have at one time mistaken the Hydrocele for the scirrhus Testicle; and, at

* Sharp, Douglas, Pott.

another, the scirrhus Testicle for the Hydrocele. I have seen more than one instance, where, after due consultation, castration has been advised, upon the presumption of a scirrhus Testicle; and where the discovery was sometimes made before, but indeed sometimes not till after the operation was compleated, that the Testicle was sound, and that the deception was owing to a thickening and induration of the Tunica Vaginalis distended with water.

As the Hydrocele is so liable to be mistaken for a scirrhus Testicle, I shall mention two or three of its most distinguishing signs.

First, The Spermatic Cord is in a sound state in the Hydrocele; it is generally thickened and diseased in a scirrhus Testicle.

Second, A fluctuation may be perceived by an alternate pressure with the hands on the lower and anterior part of the Scrotum in the Hydrocele; or an undulation may be felt upon patting with one hand, whilst the other is applied to the opposite side of the tumour.

Third, The surface of the Hydrocele is generally smooth, the body of the Testicle lying hid
in

in the water.—Hardness with inequalities discover the scirrhus.

The Public is much indebted to Mr. Sharp* for his instructions concerning this disease; and I think, if his division of the Hydrocele into two species only had been adhered to by later writers, it would have made the knowledge of every species of watery tumour in the Scrotum more easily attainable by students. As collections of water do not form more frequently in the Spermatic Cord, cellular substance of the Scrotum, outer surface of the Tunica Vaginalis, and within the body of the Testis, than they do in the Thorax, Abdomen, Pelvis, or almost any other part of the body, there seems to be no reason to divide more minutely those of the Scrotum, as Mr. Sharp's division was fully sufficient for every practical purpose.

But my principal design, in this Essay, being to treat of the cure of the disease, I shall hasten to the consideration of the several methods prescribed by the moderns, particularly by the writers of this country; such are the tent, the seton, incision, excision of the Tunica Vaginalis, and the application of a caustic.—Every one of which was however in use among the ancients.

* Operations of Surgery, p. 34.

With

With respect to the first: A tent is introduced through a small puncture of the Tunica Vaginalis, with a view of exciting such a degree of inflammation, as will produce an adhesion of the Tunica Vaginalis to the Testis; but if no other objection could be brought against this method, it is sufficient to observe, that those who have recommended it, admit that it is not always effectual. Besides, I hope to make it appear probable, that when it does accomplish the cure, it is not in the way which has been hitherto supposed.

From the account given of the seton, it seems preferable to the tent; but it is allowed not to be a perfect method, and should be used only where the surgeon may suppose the other methods of incision and caustic would be improper; or where the patient refuses to submit to them: at the same time it is owned, that ill consequences do sometimes attend it*.

Mr. Pott says that the appearances, which follow the operation by seton, resemble those caused by a hernia humoralis†, and that the cure is performed by adhesion in consequence of inflamma-

* Pott on the Hydrocele, p. 178 and 179.

† Id. in his pamphlet on the Hydrocele, 1771, p. 12 and

tion. Now tho' inflammation may frequently procure adhesion, yet that is not always the case, at least in the testicle; for I have seen some instances, where an hydrocele has immediately followed the hernia humoralis, when the patients have ignorantly supposed the first to be the cause of the second disease*: Nay, I have now by me a testicle, which was extirpated upon a supposition of its being scirrhus; but being examined after the operation, the disease appeared to be an abscess formed in the centre of it: and tho' the body of the Testis is enlarged to four times its natural size, and the Tunica Vaginalis, probably by inflammation, has six times its natural thickness, yet there is not the least adhesion between them; and the Testis is seen lying as loose within its thickened tunic, as the kernel of a dried nut does within its shell, except where there is a natural adhesion between them at the posterior part.

Since the first Edition of this essay, my ingenious friend and colleague, Mr. Martin used the seton in two cases for the cure of the Hydrocele, at the same time that I applied a caustic to a third, with a view of determining to which method the preference should be given. He has favoured me with the following account, that, besides what is

* Vid. note at page 2d.

advanced in this work, surgeons may be enabled better to judge for themselves.

“ John Merry, aged twenty-seven years, was
 “ admitted into St. Thomas’s Hospital, the 1st
 “ of August 1771, for an Hydrocele of the Tu-
 “ nica Vaginalis of the left side, which he had
 “ first perceived about nine months before. It
 “ gradually increased, and gave him, at times,
 “ some pain in the groin.

August 3d. “ I passed a seton through it, in the
 “ improved method recommended by Mr. Pott,
 “ in his last publication on that subject. There
 “ was about a pint and a half of water discharged.
 “ The patient was put to bed, and complained
 “ for about two hours after the operation of a pain
 “ in his back ; a bread and milk poultice was ap-
 “ plied : the Scrotum was suspended in a bag
 “ truss ; and he took twenty drops of Tinctura
 “ Thebaica at bed-time. The Scrotum was well
 “ fomented, both in this and the following case,
 “ every time the poultice was renewed.”

4th. “ He complained of a pain in his back :
 “ towards the evening, his uneasiness increased,
 “ his pulse grew quicker, and therefore at night
 “ the opiate was repeated.

5th.

5th. " He slept very little in the night, complained of great pain striking from his testicle to his loins; the scrotum was tense and much inflamed. A clyster was injected, which procured two stools, but they did not relieve him much. He had frequent retchings to vomit, and complained greatly of a pain across his chest, to both which he said he had been subject at times for some years. His pulse was quick, and he took his opiate at bed-time.

6th. " He had a tolerable good night, the retchings were less frequent. The pain of his back, and the tension of the Scrotum, were great, and there was some discharge of pus from the punctures. His pulse was languid. He had his opiate as usual.

7th. " As there was no change in his symptoms, except that his retchings were gone, there was no alteration made in the treatment.

8th. " He had great pain in his loins, and in his testicle, which was much inflamed. The suppuration advanced a little. His pulse was low. I ordered a Clyster with thirty drops of Tinctura Thebaica in an emollient decoction, and allowed
C " him

“ him a little wine and salep. In the evening he
 “ said he had been easier since his poultice was
 “ renewed, which was done regularly night and
 “ morning.

9th. “ He continued pretty easy.

10th. “ He complained again of great pain in
 “ his testicle and loins: the tunica vaginalis and
 “ integuments were much thickened and inflam-
 “ ed. About a tea-spoonful of pus was discharged
 “ from the punctures by a gentle pressure. An
 “ opening clyster was injected, which procured
 “ him some ease.

11th, 12th, and 13th. “ There was no re-
 “ markable change. He was in pain at times;
 “ a little pus was discharged daily; and on the
 13th a clyster was given him.

15th. “ Having had no stool for two days, a
 “ clyster was injected in the evening; and find-
 “ ing him rather low, I ordered two ounces of
 “ Decoction of Bark once in six hours.

16th. “ His pains increased, with tenderness
 “ and seeming inflammation on the left side of
 “ the abdomen, as far as the spine of the Ilium.
 “ The

“ The discharge increased, and some threads of
“ the Seton were withdrawn.

19th. “ Some threads had been drawn out
“ on both the preceding days. He said he be-
“ lieved something had broke in the night, for
“ that he was quite easy. On removing the
“ poultice, we observed a large quantity of pus
“ in it, and we pressed out a good deal more.
“ The inflammation abated visibly, and some more
“ of the threads were taken away. He got out
“ of bed for the first time this day.

31st. “ From the 20th to this day the inflam-
“ mation diminished gradually, and a few threads
“ have been almost daily removed. The last, which
“ adhered strongly the preceding day, and gave
“ much pain on attempting it, was now brought
“ away with ease.

September 3d. “ He complained of a pain
“ in the Scrotum, and upon inspection I ob-
“ served a small collection of matter between the
“ two punctures for the Seton.

4th. “ I opened the abscess, and the patient
“ became perfectly easy.

8th. " The abscess was almost healed, so that
 " there was little or no discharge; but a thicken-
 " ing of the integuments remaining, I ordered a
 " pledget spread with Ung. Coerul. fort. to be ap-
 " plied daily.

18th. " The testicle was of its natural size.

26th. " He was discharged from the Hospital,
 " with some thickening of the integuments; but
 " in every other respect perfectly well.

" Matthew Pride, aged about forty-two, was
 " admitted into St. Thomas's Hospital, on the 1st
 " of July 1771, for Obstructions in the Urethra.
 " These I removed by the use of Bougies. He
 " had likewise an Hydrocele on the right side,
 " owing as he said to a blow, received about
 " eight years before, upon that testicle. It was
 " not painful, nor could he perceive the swelling
 " to have increased for many years. But not-
 " withstanding, the size of it rendered him unfit
 " for his duty as a sailor.

August 5th. " I passed a Seton through it, as
 " in the former case, and discharged about a
 " quart of water. The patient, in this as in the
 " former case, complained for two hours after the
 " operation of a pain in his back. I ordered
 " an

“ an Opiate, and in the evening he was quite
“ easy.”

August 6. “ He had a good night, was free
“ from pain, and his pulse not in the least quick-
“ ened. There was a slight inflammation of the
“ Scrotum, which I ordered to be covered with a
“ bread and milk poultice, and to be suspended
“ in a bag-truss. A Clyster was given in the
“ evening, which procured two stools.

10th. “ He has hitherto made no complaint
“ of pain, though there is an increase of inflam-
“ mation, and some appearance of matter on the
“ dressings.

11th. “ Being costive he had a Clyster, but
“ continued free from pain.

12th. “ There was a fluctuation in the upper
“ part of the tumour. On this day he got up
“ and sat a while in his chair, which he did every
“ succeeding day. His pulse was rather low, I
“ therefore ordered him a little of the Decoction
“ of the Bark thrice a day.

19th. “ He has hitherto been perfectly easy ;
“ what little inflammation there was now almost
“ totally

“ totally gone. There was a discharge from both
 “ the punctures ; and this day I drew out some of
 “ the threads of the Seton.

23d. “ He continues easy ; and I have drawn
 “ away from time to time such threads as were
 “ loose.

30th. “ I have not been able to draw out
 “ one thread all the last week. They adhered
 “ so strongly, that the attempt gave great pain.

“ September 3d. I opened a small abscess form-
 “ ed between the two orifices of the Seton. This
 “ relieved the patient from some pain of which
 “ he had before complained. There now remain-
 “ ed only one thread, which I could not get
 “ out.

13th. “ The Abscess was healed. One thread
 “ remained in, and there was a considerable thick-
 “ ening of the integuments in the direction of the
 “ Seton, but no pain. There was still a fluctu-
 “ ation in the upper part of the Tumour. The
 “ poultice was changed for an application of the
 “ Mercurial Ointment.

27th. “ In attempting to withdraw the thread
 “ it

“ it broke, and the upper portion of it only came
 “ away. The thickening of the integuments
 “ was greatly diminished.

October 25th. “ He was dismissed from the
 “ Hospital for drunkenness and repeated irregu-
 “ larities, a part of the thread still remaining in
 “ the Scrotum.

“ December 21st, I saw him. The thread was still
 “ in the Scrotum, but I pulled it out without
 “ using any force. The thickening of the In-
 “ teguments was perfectly gone, except a very
 “ trifling one about the Orifice in which the
 “ thread had remained. There was plainly some
 “ water contained in the Scrotum, but whether
 “ it was in a distinct Cyst, or in the Tunica
 “ Vaginalis, and that the inflammation had not
 “ run high enough to compleat a cure, I am un-
 “ able to determine. However it was so small
 “ that the patient suffered no inconvenience from
 “ it.

“ As the advocates for the Seton allow the
 “ cure is effected by an inflammation brought on
 “ the Tunica Vaginalis and Albuginea, I cannot
 “ help suspecting, that a thickening of the Albu-
 “ ginea, which must naturally follow the inflamma-
 “ tion

“tion, may greatly injure, if not destroy the
“function of the Testis itself.”

The judicious reader will observe, that these patients had every thing done for them, which could alleviate the inconveniences attending such an operation; but with all these helps, I cannot think it comparable to the method by small Caustic. The first of them suffered greatly more pain, confinement, and trouble, from fomentations and cataplasms, took more medicines, and was more reduced, than I ever knew any patient, upon whom the small Caustic was practised: besides suppuration and difficulty in removing the threads. The other suffered all the inconveniences except the pain; the inflammation and suppuration not having been so considerable. And therefore water was apparently found in the Scrotum above four months after the first application of the Seton.

I cannot conceive the Seton to act in any other manner, than by irritation, as the Tent does: And this appears the more probable, because these two cases very much resembled, in their consequences, the cases of the Tent mentioned by Mr. Warner*; and indeed that experienced Surgeon

* Mr. Warner's Cases.

foretold every remarkable circumstance, which attended them; tho' he had never seen the Seton used.

And it cannot be doubted, that the Seton does injure the Testis, as well as the Tunica Vaginalis; which gives the small caustic greatly the advantage: for that affects only the Tunica Vaginalis, the part concerned of the least consequence; in which process the Scrotum is not swelled, but only at a certain period becomes harder. Whereas the large swelling of the Scrotum, and pain after the Seton, indisputably shew the affection of the testicle itself.

The method of cure by incision is one of the most easy operations in surgery, consisting only of a simple dilatation of the Tunica Vaginalis from one extremity to the other, unless the Vaginal Coat should be found thickened and indurated; in which case, it is recommended to cut away as much as can be done conveniently*.

If this operation was followed with no worse
D symptoms

* Mr. Pott, in his Letter published at the end of Douglas's Treatise, says, his method was to take away as much of the Tunica Vaginalis as he could with a knife, without making

symptoms than commonly attend castration, it would perhaps be preferable to any other method.

The greater number of such authors as have fallen into my hands, content themselves with describing the method, without informing us of the consequences. Those, however, who have performed it, give not the most favourable account of the symptoms attending it.

Wifeman* says "the patient should be of a tolerable habit of body, and not in his declining age; and afterwards wishes us to consider the age and habit of body, before we begin this way of cure; for such patients are subject to colics, fevers, singultus, &c. and, if the native heat be weak, to gangrene."

Cheselden † says the disease is rarely cured without opening the cavity, where the water is contained. "This," he adds, "I have done and seen done several times: but never thought the making any exception: but in his own Treatise of the Hydrocele published afterwards, he follows Le Dran, and recommends the removal of the Cyst only when it is thickened.

* Wifeman's Surgery, chap. 23. † Anatom. p. 264.
"cure

“cure worth the trouble and pain the patient underwent.”

Heister says the *curatio perfecta* (which implies the incision) confines the patient several weeks to his bed, and is both painful, and in some measure dangerous*.

Mr. Warner says he has never seen any fatal consequences arise from the incision; but advises that it should only be practised upon those who are of a good habit of body, and who have not exceeded the middle stage of life†.

Mr. Sharp, in his *Treatise on the Operations of Surgery*, says, that the incision, and he includes also the caustic, is attended with so much danger, “that, notwithstanding its success in the end,” he believes, “whoever reads the cases he adjoins” will be apt to discard the method, and abide “rather by the palliative cure.” In subsequent editions he substitutes the word trouble for danger†.

In one case related of a healthy man, forty-four years old, it appears, that on the night of the

* *Surgery*, part 2. sect. 5.

† *Warner's Cases*,

No. 43. 3d. Edit.

† Ed. 6. p. 41.

operation he grew feverish, had violent pain in his back, and for four days continued in a most dangerous condition, till the fever tended to a crisis by the suppuration of both the wound and testicle; which forced him to open the body of the Testis. He adds, that after the cicatrization of the wound the patient was restored to perfect health ||. He does not indeed say that the function of the Testis was continued; for I think that must probably be destroyed, when matter was formed in the body of it, and that opened for its discharge.

From his second case it appears that the operation was performed on a boy about eight years of age, who narrowly escaped with life. The symptomatic fever attending terminated at last in an abscess of the Scrotum †. He says that he has known a few examples in its favour, but by no means enough to warrant the recommendation of it, unless to such as are very impatient under the distemper, and are willing to suffer any thing for a cure ‡.

Mr. Pott observes, “ that Paulus Ægineta, “ Albucasis, Severinus, and many others of the “ best ancient writers, have given an account of

|| Ed. 6. p. 42.

† Ib. p. 42.

‡ Ib. p. 46.

“ this

“ this operation ; and it has at all times been
 “ practised by some, though it has generally been
 “ decried and dreaded †.” He adds, “ that the
 “ membranous structure of the parts, on which
 “ the wound is inflicted, their continuation from
 “ the Peritonæum, and the great irritability of
 “ some of those, which are necessarily laid bare
 “ and put under the necessity of receiving dress-
 “ ings, must occasion pain and a symptomatic
 “ fever ‡ ; and that the operation is, or ought to
 “ be, confined to the young and healthy ¶.”

“ The general induration of all the parts about
 “ the thick tumid lips of the incision, and the
 “ general inflammatory enlargement of the Scro-
 “ tum, have for the first four or five days a dis-
 “ agreeable appearance ; and may, if neglected
 “ or mis-treated, prove very troublesome, or even
 “ hazardous *. That it is sometimes attended with
 “ troublesome symptoms is beyond all doubt ;

† Treatise on the Hydrocele, p. 160.

‡ Ib. p. 165.

¶ Id. ibid. Notwithstanding these conditions were com-
 plied with, yet in one of Mr. Sharp's patients, aged 44, the
 Testicle suppurated, and he had like to have lost his life.
 Another, a boy of eight years, narrowly escaped.

* Pott, ibid.

“ and

“and so is the method by caustic: I cannot say
 “that I have never seen it prove fatal; nor can
 “that be said of any operation of consequence †.”
 In the following page, he observes, “that this
 “method can never be said to be totally and
 “absolutely void of some danger, and that it
 “bears the appearance of an operation of some
 “severity ‡.”

After these quotations from Mr. Pott, it will
 be right to set forth what he alledges in favour
 of this method: He says, “I am very confident
 “that the ills attending it have been much ex-
 “aggerated; that, under proper cautions and re-
 “strictions, it will be found to be practicable
 “with perfect safety; and that it ought by no
 “means to be laid aside ||. That when the febrile
 “symptoms are appeased, and a kindly suppu-
 “ration begun, let the surgeon have patience,
 “and not by an over-officiousness, or by improper
 “dressings, interrupt nature in what she is about;
 “let him by warm fomentations keep the parts
 “clean and perspirable; let him dress the wound
 “with a small quantity of soft, easy, digestive

† Pott's Treatise on the Hydrocele, p. 172.

‡ Ib. p. 173.

|| Ib. p. 160.

“ applica-

“ applications; and covering the whole Scrotum
 “ with a soft warm poultice, suspend it in a pro-
 “ per bag, and he will in general soon see a
 “ favourable change in all the appearances; he
 “ will see the inflammation disappear, the tumour
 “ resolve, and all the tumefaction in due time
 “ subside. But if he neglects these general cau-
 “ tions, and, under a notion of assisting digestion,
 “ goes to work with precipitate and other irri-
 “ tating dressings, the face of things will not be
 “ so agreeable; the tumour will not subside; and
 “ he will continue, or rather create a painful in-
 “ digested sore, with all its consequences; but
 “ for which he only is accountable †.” He ob-
 “ serves, “that some writers of very good character
 “ have appeared very averse to this method, and
 “ have ascribed to it such symptoms in general,
 “ as are indeed very alarming; but which do not
 “ occur, unless the operation be performed im-
 “ properly, or on subjects unfit for it; that he
 “ has practised it very often, and does not re-
 “ member to have seen any ill effects from it
 “ more than two or three times †; and that he
 “ has so often made the experiment, and with
 “ such success, that he cannot hesitate to assert,
 “ that under the necessary restraints, regarding

† Pott's Treatise on the Hydrocele, p. 166 and 167.

† Ib. p. 160.

“ age,

“ age, habit, state of the disease, &c. it is a very
 “ useful operation ; and is inclined to believe,
 “ that, besides the choice of improper subjects,
 “ or in improper circumstances, surgeons have
 “ been unnecessarily alarmed at what would not
 “ in other cases have alarmed them ; or that, not
 “ being sufficiently apprehensive and attentive,
 “ they have suffered their patients to get into
 “ circumstances of hazard, which are not just-
 “ ly chargeable on the operation merely, and
 “ would not happen under more careful manage-
 “ ment. ||”

The radical cure by excision means the cut-
 ting away the whole Tunica Vaginalis, whether
 it be in a sound or diseased state. For many
 who prefer simple incision as the radical cure,
 direct so much of the Tunica Vaginalis to be
 removed as shall appear much thickened or in-
 dured.

Upon a presumption then, that the ill symp-
 toms which attend a large wound of the Tunica
 Vaginalis arose from the inflammation and sup-
 puration of that membrane, it has been proposed
 to cut it all off, in hopes of removing entirely

|| Pott's Treatise on the Hydrocele, p. 160 and 161,

the cause of the mischief: and to support this practice, great pains have been taken to prove the analogy between the Cysts of common encysted tumours, and the Tunica Vaginalis of the Testicle in this species of Hydrocele †, but, in my opinion, without the success necessary to warrant the conclusion drawn from it.

Douglas is the only modern surgeon, who has ventured to propose this method; but from his account of the operation it appears to be exceedingly tedious and painful; and some, who have seen it performed, have assured me that it seemed cruel to a degree which shocked them.

Upon examining the cases, which are offered to recommend this operation to us, we find that pain in the loins came on very early, together with great swelling of the Scrotum, and a very alarming fever; that the Testicle swelled, and in one case projected out of the wound, and in another became livid, required to have the body opened, and was attended with an exfoliation of the Albuginea ‡.

† Douglas on the Hydrocele, chap. 3.

‡ Ibid. case 1.

Mr. Warner never saw this method put in practice but once ; and then the patient died of the fever, which was immediately occasioned by it ||.

I shall next consider the method by caustic, as it has been commonly directed. The most eminent of the moderns agree in recommending a large caustic to be laid upon the anterior part of the Scrotum.

Wiseman applied a caustic according to the length of the part, and the next day divided the Eschar †.

Heister advises a large caustic ; but does not mention the division of the Eschar *, if it has penetrated.

Palfyn says, that in a double Hydrocele he laid a large caustic on each side, and afterwards opened the Eschar and filled it with dossils dipped in brandy ‡.

|| Warner, case 43.

† Wiseman, ch. 23.

* Heister, part 2. sect. 5.

‡ Palfyn Anatomie Chirurgicale, tome seconde, ch. 20.

Monro, as well as Heister, omits mentioning the size of the caustic; but it is evident from his words, that he designed it large: for he says he would prefer “the application of the caustic along
“the tumour to destroy the skin, previous to an
“incision into the Sac; for, by the caustic, one
“has a larger opening into the integuments, than
“by incision †.”

Mr. Sharp says, that he laid on the anterior and upper part of the Scrotum, a caustic about six inches long and one broad, and discharged the water on the day following by a small puncture ‡.

Dionis advises a caustic to be applied the length of the Scrotum, and as soon as it has had its effect, to open the Eschar during its whole extent || to the bottom of the Scrotum.

Mr. Pott's description of the method by caustic is as follows: “A piece of the common paste
“caustic, rather less than a finger's breadth, properly secured by plaster, is applied the whole
“length of the anterior part of the tumour,

† Medical Essays, vol. 5. art. 22.
ch. 9. case 3.

‡ Operations,

|| Demonstrat. 4th.

“ which will necessarily make an Eschar of pro-
 “ portional size ; when this Eschar either casts off,
 “ or is divided, an opening of nearly the same
 “ length and breadth is thereby intended to be
 “ made into the cavity of the Tunica Vaginalis
 “ Testis ; by which means an opportunity is
 “ given to the surgeon, to apply such dressings to
 “ the inside of the said Tunic, as shall by the
 “ generation of new flesh fill up and abolish its
 “ cavity †.”

This appears to me a just representation of the
 method by Caustic described in authors. But Mr.
 Pott, in his last publication on this subject, seems
 to confound it with the small Caustic, which I
 have recommended : for he says, “ that all the
 “ practitioners who make use of the latter, *the*
 “ *Caustic*, allow that it produces a slough of the
 “ whole Tunica Vaginalis ; that it destroys the
 “ whole bag or cyst ; and that it is used with
 “ an intention so to do ||.” Now the total de-
 struction of the Tunica Vaginalis, by slough-
 ing away, has, in general, been thought a po-
 sition so new, that it has been considered as the
 principal objection to my doctrine ; supposing

† Pott on the Hydrocele, p. 155 and 156.

|| Pamphlet 1771, p. 41.

it an assertion, which I could not make good without absolute dissection.

It does not appear to me, that writers on this subject ever thought of this membrane separating in sloughs: and yet when large caustics were used, I am surprized how this observation escaped them. Indeed the sagacious Wiseman speaks of a slough attending both the incision and caustic, but does not seem to have had the least idea of the whole Tunica Vaginalis sloughing away. Besides, he treats obscurely both of the disease and method of cure, as did all the surgeons at that time, owing to their great deficiency in the anatomy of the parts concerned.

Douglas has published Mr. Baker's method of cure by caustic, which the latter always practised; but having frequently seen it myself, and conversed with Mr. Baker on the subject, I shall mention it afterwards.

We will now consider the consequences, which have been said to follow this method of obtaining the radical cure, with the objections which have been raised against it; so that a judgment may be formed how far they are obviated or prevented by the particular mode, which will be recommended.

Wiseman

Wiseman seems to think that the symptoms attending the caustic and incision are nearly equal, and his practice was conformable to this opinion: for in two patients whose cases he relates, who had an Hydrocele on each side of the Scrotum, he performed the cure in one by caustic, and in the other by incision, and says of both methods what I mentioned before, "that such patients are subject to colics, fevers, singultus, and, if the native heat be weak, to gangrene."

Garengot condemns the use of the caustic*, tho' he says most authors declare in favour of it—His first reason is "that all caustics act slowly, and that, during their action, the liquid, which we suppose already corrupted, will become more so." But I believe no advocate will be found to plead for a corrupted state of the liquid in an Hydrocele, at this time.

Secondly, "he thinks the caustic cannot be confined to a certain space, but that it will spread further than the surgeon intended."—It must be owned a difficult matter to confine a caustic upon the Scrotum, but it will be more easy to confine a small than a large one; yet, if

* Garengot *Traité des Operations*, ch. 6. art. 3.

after

after proper precautions it should spread somewhat further than the surgeon intended, no extraordinary mischief will ensue, if it does not come at the Testicle.

Thirdly, "That notwithstanding the application of the caustic, the Eschar must afterwards be opened, and therefore it would be much better to use the instrument at first."—If there was any real necessity for dividing the Eschar, there might be some weight in this objection; but I hope to make it appear, that the cure may proceed equally well without that step.

Fourthly, "That the potential Cautery dissolving and mixing with the fluid has rendered it caustic, and produced disorders almost irreparable."—Every day's experience shews this to be void of all foundation.

It appears from Mr. Sharp's case of the caustic, that on the third day the patient began to have great pain in the back and loins, and the Scrotum became exceedingly inflamed and thickened, the symptomatic fever running high; in which state he remained for a week. This was followed by an ague; and the case at last terminated by two imposthumations.

Mr.

Mr. Pott has not given us any cases, where he had performed the radical cure either by incision or caustic ; but seems to think that the ill consequences are much the same : he says, “ whoever “ promises to perform or expects to receive a “ radical cure by caustic, upon much easier terms “ than by incision, will most frequently be disappointed ; that is, they will find the fever and “ inflammatory symptoms full as high, and the “ sore full as painful, in the one as in the other ; “ and consequently all their care and attention, to “ obviate mischief, full as necessary. Neither is “ the necessary confinement, in general, at all less “ in the one than in the other *.”

Whoever considers what has been advanced in the foregoing pages, concerning the different methods employed to obtain a radical cure of the Hydrocele of the Tunica Vaginalis Testis, must observe, that all of them, when they proved effectual, have been generally attended with great inconveniences, and sometimes with very alarming danger, both to the functions of the diseased part, and to the life of the patient. These circumstances then have induced me to recommend a method, which I have used in St. Thomas's

* Pott on the Hydrocele, p. 158.

Hospital and elsewhere, and have been practised for a number of years; and which, from repeated experience and observation, I am fully convinced is very little embarrassing to the surgeon, very easy and totally void of danger to the patient.

The method is this, to lay a small caustic upon the anterior and inferior part of the Scrotum, taking care to avoid the Testicle: a large caustic is quite unnecessary, and every advantage may be derived from one, whose Eschar will be no bigger than a shilling. The loose and pendulous situation of the Scrotum renders the application of a bandage so very inconvenient, that we cannot easily prevent the caustic from spreading somewhat: for this reason I cover no more than the size of a sixpence, on a presumption that it may make an Eschar as broad as a shilling, though it commonly makes one the size of a half crown.

The intention is that it shall affect, and, if possible, penetrate through the Tunica Vaginalis; so that the time it is suffered to lie on, is proportioned to the supposed thickness of the Cyst. It should never remain on less than five hours; but if it be suffered twenty-four, it can do no

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mischief

mischief when properly guarded. On the removal of the Caustic, digestives may be applied to the Eschar, or the common cataplasm of white bread and milk. The Scrotum must be suspended in a bag truss; and the patient had best be confined to his bed; though even this circumstance is sometimes omitted without detriment. Sometimes immediately after removing the Caustic, sometimes within twenty or twenty-four hours, or even at the distance of two or three days, the patient begins to complain of pain in the Scrotum and Loins, has now and then some colic pains, the pulse a little quickened, and the tongue whitish. At different periods of time from the removal of the Caustic, but generally within forty-eight hours, an alteration is perceptible in the Scrotum: the tumour upon grasping feels more tense and hard than it was before; and this hardness answers to the figure of the Tunica Vaginalis in its whole extent; and a little attention will convince an observer, that it is this membrane alone, which gives the sensation of tension and hardness, and no other part.

The colic pains and febricula seldom continue more than a day or two, and very frequently are so inconsiderable, as to require neither evacuation,
tion,

tion, nor any internal medicines. If however the pulse is quicker than common, the pain of the back, and the colic, distressing to the patient, they will be speedily removed by once or twice bleeding, and injecting one or two clysters. As soon as the pain of the back (except what arises from the weight of the Scrotum) the febrile heat, and other symptoms, are removed, (for they commonly go off all together) the patient need no longer be confined to his bed, but may be suffered to get up and walk about the room, provided the Scrotum be suspended. It need scarcely be given as a caution, that the suspension should be carefully attended to, while the water remains inclosed; and that the truss make not too rude or unequal a pressure on any part.

In a few days the Eschar of the Scrotum will loosen and come away, exposing to view the Tunica Vaginalis, which bears evident marks of its having been affected by the caustic, and prepared to slough off; and, when pressed with the finger, the undulation of the water may be felt within it. As the cure proceeds, the sloughy Tunica Vaginalis will project more and more through the orifice in the Scrotum; and when it appears ready to burst, it may be punctured with a lancet, and for this reason only, that it will re-

lieve the patient from the weight of the tumour : for no other advantage can be derived from it. If the water be discharged by a puncture, the Scrotum by degrees collapses, and the orifice in it is filled up with slough, which prevents the access of external air to the Testicle. These sloughs continue to come away with the dressings daily for about four, five, or six weeks, and in proportion to their discharge, the hard tumour of the Scrotum lessens. By the time the last slough casts off, the hardness is entirely gone, and the wound immediately cicatrizes ; and the cicatrix, being about the size of a finger's end, adheres strongly to the body of the Testis, which has never come in sight, nor has had any application brought in contact with it during the whole process*.

Whoever will carefully attend to the several appearances that accompany this method, must be satisfied that the caustic excites an inflammation of the Tunica Vaginalis, which spreads

* The sloughs sometimes come away in small flakes, attended with a gleety discharge ; at other times in very large pieces, so that I have drawn away a piece of slough as big as a walnut. The aperture in the Scrotum will sometimes contract to a very small size ; but let no Surgeon be afraid of its closing too soon ; for no art can heal it up, till all the slough is discharged. Nor do I ever suffer a probe or any foreign body to be introduced into it.

through

through the whole of it ; in consequence of which, the entire membrane suppurates, and comes away in sloughs ; so that whether we consider the Tunica Vaginalis as secreting or containing the fluid, the radical cure is equally performed ; and whatever future accumulation of water may happen to form on that side of the Scrotum, it must be either of the Anasarcous or Hydatid kind.

From what I have advanced in this Essay, as well to explain the method by large Caustic and its consequences, described in authors, as to recommend the process by small Caustic from reasoning and experience ; I believe they will be found to differ greatly, and that conclusions, with regard to the Caustic in general, cannot be drawn from either indifferently. For altho' the Caustic is the instrument of cure in both the old and new method, yet its size, and the manner of treatment, make the processes widely different ; and it is easy to see, that on these variations *depend* the difference of event. The direful symptoms, and even death, which followed the method by large Caustic, being without doubt owing to "the injury which (to use Mr. Pott's words) the irritable and acutely sensible testicle receives * :"

* Note to p. 164, in Treatise on Hydrocele.

while

while the mildness and safety of the other proceeds from avoiding all possible irritation and exposure of it.

Mr. Pott has declared his opinion to be determined, and that he is convinced the Seton is the most successfully efficacious of any method of cure in this disease *. Yet it does not appear to me, from his writings, that he ever saw put in practice the method by small Caustic which I have recommended. His conclusion with regard to the Caustic, compared with the Seton, is, that “this last accomplishes the cure by the adhesion of the two coats together, without any destruction of parts; in which consists the material difference between the method of cure by Seton and that by Caustic §.” But supposing that the Seton does effect the cure in the manner he imagines, yet the matter in dispute may be reduced to what every man’s judgment will decide in a moment; that is, whether it is better totally to remove, with trifling pain, and no danger to the patient, a part, from the loss of which he feels no inconvenience, and by that means prevent all possibility of a relapse; or

* Pamphlet on the Hydrocele, 1771.

§ Pamphlet p. 41.

to suffer an useless part to remain in a preternatural and diseased state, without any benefit to the patient.

During the time I was with the late Mr. Girle, I laid a great number of caustics on hospital patients, by his direction, for the radical cure of this species of Hydrocele; and have since used this method myself both in public and private; and can with great safety assert, that I never knew the febrile symptoms last three days, rarely more than twenty-four hours, and that the patient never felt very extraordinary pain, nor ever appeared in danger.

Dr. Huck, as well as myself, has heard Mr. Girle declare, that during nineteen years practice in St. Thomas's Hospital, and a very extensive practice in private, he had continued to use it, and never met with one case, where he thought there was the appearance of hazard*.

I have heard of some cases, since the first edition of this little Essay, where the method pro-

* He told me, that he had met with two cases, where the sloughs, which were discharged, were of a beautiful red colour.

posed had failed, particularly two at Paris ; one of which I cured last May by a Caustic, laid on by myself, and the other has been since cured by Monsieur Brassant, together with three more. Upon examination, all the failures, which have come to my knowledge, appear to have been owing to some fault either in quantity or quality of the Caustic ; or to an improper application of it : it therefore seems necessary to describe more minutely my manner of preparing, applying, and securing the plaster, which is to confine the Caustic, and also the composition of the Caustic itself.

I take a piece of old linen as broad as the palm of my hand, spread with some good adhesive plaster, and laying it upon a glazed surface, such as the back of a plate, that it may not adhere, I make from the centre several cuts with a pair of scissars, turning up the angular slips, so as to form a circular hole about the size of a sixpence ; round which I apply narrow slips of plaster, till I have made it half an inch deep, for the reception of the Caustic. The patient being in bed, laid upon his back, the plaster is to be applied upon the Scrotum, so as to have the hole directly over the part upon which the

Cautic is to act, and which place I generally ascertain by a circular mark, drawn with ink. As soon as the plaster sticks, I guard it carefully all round with small bits of lint cut very short. The cavity is next to be entirely filled with Cautic, which should be softened by a drop of two of water; or by exposure to the air, while it is breaking down with a spatula, to the consistence of paste. Over this a slip of plaster is applied; and to secure it more fully, a second may be put on, transverse to the first. I then apply a double-headed roller round the body, carrying one head two or three times between the legs and over the Cautic; drawing it moderately tight. The roller being applied, I give directions to the patient not to touch it, but to lie still, till I think proper to remove it. These rules being observed, and the following Cautic employed, I consider, and have always found, the success infallible.

THE COMPOSITION OF THE CAUSTIC.

R^x Lixiv. Sapon. Pharmacop. Lond. ℥ij Coque
 ad ℥viiij ; dein liquori bullient. adde
 Extract Thebaic. pulv. ℥i. *
 Calc. Viv. pulv. ℥ij vel q. s.
 donec omnem liquorem absorpserit, ut fiat Pasta,
 quæ vate optimè clauso servari debet.

Mr. Baker's method differs very little from that which I have recommended : his Caustics were larger, so that the Eschar would measure, in its broadest part, more than two inches diameter : this however was not what he chose, for he recommends the Eschar to be about the size of a half crown : he never punctured the Tunica Vaginalis for discharging the water ; but suffered it

* Within this last twelvemonth only, we have mixed opium with our Caustic, and we have reason to think it greatly lessens the pain, insomuch that several patients have fallen asleep during its operation ; and all have owned that it was very easy to bear : nor does the opium appear in the least to destroy the virtue of the Caustic, which I always suffer now to lie on twelve hours ; and by that means so completely destroy the Scrotum, which it touches, that the Tunica Vaginalis commonly becomes visible on its removal.

to come away by degrees with the sloughs. He has assured me, that having been twenty-nine years surgeon to St. Thomas's Hospital, he had, during that period, used it both in public and private, had never seen any bad consequences from it, nor even cause to be alarmed at any appearance of danger. That he has frequently performed it on both sides of the Scrotum, in people of all ages, and used it once in a merchant, who would not suffer himself to be confined, but went out daily about his business, from the application of the caustic to the cicatrization of the wound.

This method of cure I mentioned to my friend Mr. Way several years ago ; since which he has practised it in Guy's Hospital, and never saw any mischief happen but once ; and then the ill which arose were not chargeable on the operation itself*.

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I have

* Since the first edition of this Essay, Mr. Way has favoured me with the following explanation. "The mischief, to which I alluded, happened to a man of sixty years old and upwards. His Testicle lay at the bottom of the Scrotum, upon which place, contrary to my express direction, the Caustic was applied. A very smart fever ensued, matter was formed, a mortification followed, and a considerable part of the integuments separated: notwithstanding

I have advised that the Caustic be laid upon the anterior and inferior part of the Scrotum ; and there is this good reason for making that the place of election, because the discharge of the sloughs will be facilitated by the dependence of the orifice : but if any particular circumstances should make it improper, the advantage thereby obtained is not absolutely necessary to success, as will appear by the following case.

An eminent laceman was affected with an Hydrocele, for which I had occasionally tapped him for three or four years ; but being very wretched under his complaint, he determined to undergo the radical cure.

Hydroceles of the Tunica Vaginalis commonly

“ withstanding which, with great care and attention the patient perfectly recovered, and his testicle was preserved in a sound state.”

“ From Midsummer 1762 to this time, I have had many opportunities of applying the small Caustic for the radical cure of the Hydrocele of the Tunica Vaginalis Testis (in two of which the subjects were seventy years old) and have found no reason to alter my opinion in respect of the superior advantages of this method of cure to any other I have either seen, or known to be practised.

LEWIS WAY.”

approach

approach to an elliptic form, and their direction is perpendicular, with one extremity turned upwards and the other downwards ; but in this patient it was horizontally oblong, with one extremity pointing forwards and the other backwards, resting on the perinæum. The particular figure of it here was, in all probability, derived from its having been constantly supported in a bag-truss from its first appearance. The Testicle lay at the bottom of the Scrotum, and could easily be felt. When the radical cure was determined upon, Mr. Girle and Dr. Hunter were desired to consult with me, and fix upon the proper place for the application of the caustic. It was impossible to lay it on the bottom of the Scrotum without injuring the body of the Testis : it was next proposed to lay it on the posterior part of the Scrotum ; but on examination we could feel the spermatic vessels in the way : we therefore determined to apply it on the superior and anterior part ; which was accordingly done, and no inconvenience ensued. On puncturing the Eschar at a proper time, the water was let out, the Scrotum soon contracted, and the sloughs were discharged, as easily as they would have been, had the caustic been laid on the lower part of the Scrotum : so that though he appeared in his shop a fortnight before the wound

was

was healed up, yet he was perfectly well in less than six weeks from the application of the caustic*.

It

* The uninterrupted success I have met with in a great number of cases, has lately emboldened me to undertake the cure of Hydroceles, which, a few years ago, I should have been afraid to meddle with. Two cases in particular seem worth mentioning; one, of the servant of an eminent merchant of this city, who had an enormous Hydrocele of a singular form, resembling somewhat a sugar-loaf, with its basis upwards; and when the water was discharged by tapping, which I did three times before I ventured on the radical cure, there appeared an hard lump, of the size of an hen's egg, at the upper part of the Testicle, together with another, about the size of a chestnut, on the cord, and likewise a considerable thickness of the cellular substance at the lower part of the Scrotum. But as he had no pain, either in the testicle, cord, or back, I concluded there was no cancerous virus in the habit, and therefore ventured on the operation. The consequence answered my expectation: he got perfectly well of his Hydrocele, with great ease to himself; and the hardness of the testicle and cord remained as before.

The other was the case of Mr. Richard Penney, who now holds an office under the Lord Mayor; the radical cure of whose Hydrocele some of the most deservedly eminent surgeons in town would not undertake, and where even the Seton was declined; though there was no other peculiarity in the case, than the Testicle being apparent at the bottom of the Scrotum, attended with some thickening of

It will not be amiss now to consider why the symptoms, which attend the common method of using the caustic, are so much more unfavourable than in the method I have recommended.

One reason may be the great size of the caustic, which it will be very difficult to prevent from affecting the Testicle, as has been already observed.

Secondly, The admission of air to the inside of the Tunica Vaginalis is probably another.

But Thirdly, The principal cause I believe to be the exposure of the Testicle, and its being unavoidably brought into contact with the dressings and other extraneous bodies.

It seems to be the general opinion of the latest writers, and indeed of most practitioners, so far as I have been able to collect, that the bad symptoms attending the common method of caustic and incision are derived from the inflammation and

of its cellular substance. Yet he got well with so much ease, that during the process he was apprehensive it would not succeed, as he felt so little pain.

suppura-

suppuration of the Tunica Vaginalis †; but they pay little attention to, or scarce mention the Testicle; though it was once a peritonæal Viscus, and has

† Mr. Sharp denies, that the unfavourable symptoms can arise from the external side of the Tunica Vaginalis being exposed to the air; “for he has often seen the whole Scrotum separating in a gangrene from the Tunica Vaginalis, and leaving it naked a great many days without any ill effect*.” But the case may differ widely when the air has access to its inside: and perhaps the danger, which followed the application of the caustic to one of his patients, might be owing to the admission of air through the punctured Eschar; as the tension of the inflamed tunic would resist the contraction of the Scrotum. And in the instance where he injected spirit of wine, there can be no doubt but it produced the inflammation; but it may be difficult to determine whether the inflammation arose from the affection of the Tunica Vaginalis, or the Testicle.

The sloughing away of the Scrotum only lays bare the outer surface of the Tunica Vaginalis; the Testicle remains covered. This therefore does not prove that no ill symptoms follow, when that coat is laid open, and its inner surface and the Tunica Albuginea are exposed. If the Testicle is found diseased during the operation of incision, and is extirpated, the wound in general heals kindly without any bad symptoms; which would lead us to suppose, that the ill symptoms arose from suffering either the inside of the Tunica Vaginalis, Tunica Albuginea, or both to remain

* Sharp's Operations, edit. 6th, p. 47.

exposed

has within these few years been found to be covered by a part, which was § originally a process of the Peritonæum; yet at the same time the Tunica Albuginea is asserted to be very irritable as well as acutely sensible †. And the appearances, which quickly follow the use either of a large caustic and opening the Eschar, or cutting the whole length of the Tunica Vaginalis, or the excision of the Cyst, corroborate this opinion: for the Testicle becomes swelled, sometimes to four times its natural size †, is liable to have its Tunica Albuginea slough away ||, and not unfrequently to suppurate *.

exposed and in the way of irritation: and whoever considers how exquisitely sensible the Tunica Nervea is supposed to be, will think it more probable, that the mischief arises from that coat than the other.

§ The Tunica Vaginalis.

† Monro says the Testicle will not bear irritation. Ed. Med. Essays, vol. 5. art. 22. And Mr. Pott, the best advocate for incision, informs us, “ that the great irritability of
“ some of those parts, which are necessarily laid bare, and
“ put under a necessity of receiving dressings, must occasion pain and a symptomatic fever.” Pott on the Hydrocele, p. 164.

† Douglas.

|| Ibid. Gooch.

* Ibid. Sharp.

Tho' the external air may co-operate in producing these bad effects; yet I imagine the principal cause to be the irritation which the Testicle must necessarily undergo from the application of dressings. I once saw a surgeon perform the operation of castration, when finding the Septum affected by the cancerous virus, he thought proper to remove it; in doing which he opened the Tunica Vaginalis of the opposite side, by which means the sound Testicle appeared loose and rolling in the wound: not chusing to have it remain in that situation, he entirely covered it by a flap of the Scrotum, and secured it with two stitches; so that the Testicle was entirely hid, and the wound healed up without any one bad symptom †.

Almost all the later writers are of opinion, that whether the tent, seton, caustic or incision be used for the radical cure, the effect is the same, and the future accumulation prevented by

† This has since happened to myself in a man, who laboured under the Chimney-sweeper's Cancer. It was thought necessary to remove one Testicle, and about two-thirds of the Scrotum: in doing which (though I took great pains to avoid it) I opened the Tunica Vaginalis of the opposite side, and let out the sound Testicle. I had scarce Scrotum enough left to cover it, yet by means of two stitches I succeeded, and the wound healed up in the kindest manner.

these

these methods exciting an inflammation, which produces an adhesion between the Tunica Vaginalis and Tunica Albuginea, and thus obliterates the cavity, in which the fluid was deposited. Tho' the means are somewhat different, yet the intention is the same, when Monro directs the Canula of the Trocar to be left in the wound, that by its extremity rubbing against the Testicle it may excite an inflammation, and so produce a cohesion between the Tunica Vaginalis and Albuginea *.

Mr. Sharp attributes the perfect cure to the universal adhesion of the teguments of the Scrotum to one another and to the Testicle itself §.

H 2 Mr.

* "Considering how readily contiguous inflamed parts grow together, and how many instances there are of people obtaining a radical cure of this Hydrocele by inflammation coming on the parts, it would seem no unreasonable practice to endeavour a concretion of the two coats of the Testicle, when they are brought contiguous, after letting out the water thro' the Canula of a Trocar, by artfully raising a sufficient degree of inflammation." Ed. Med. Essays, vol. 5.

§ His words are, "Tis worth observing, that upon examination

Mr. Warner mentions a case, where he accomplished the radical cure by means of a tent introduced thro' a puncture made by a lancet: a discharge came on the fourth day, which was followed by an abscess, and that being opened the discharge decreased and continued to do so till the wound was healed, which happened in a few days afterwards: and he adds, "that the coats of the Testicle and Testicle itself formed an adhesion with each other †."

From what Mr. Warner says I am much inclined to think, that when the tent cures, it acts in the same way as the caustic does; that is, by its means an inflammation is excited in the Tunica Vaginalis, which extends quite thro' it, and renders it sloughy; but the orifice in the Scrotum being small, the sloughs cannot make their way; in consequence of which a suppuration

"amination of the several Hydroceles, it appeared evidently their cure was wrought by an universal adhesion of the Testicle to the Tunica Vaginalis, and again of that coat to the parts enveloping it". And the same doctrine he repeats in his Critical Enquiry^b.

† Warner's Cases, No. 42. p. 258.

^a Sharp's Operations, p. 46.

^b Critical Enquiry, p. 87.

of

of the Scrotum comes on, and the greater part of the Tunica Vaginalis is rotted down and mixed with the pus, before the abscess is opened*.

Douglas seems to think, that the cure may be produced several ways, when the tumour is recent; and that the Tunica Vaginalis may be brought to cohere to the Testicle: That, in consequence of the caustic, the cure may be said to consist in the inflammation raised by it on the Tunica Vaginalis, which, after the mortified part is thrown off, collapses round the Testicle, and prevents any fresh collection of water within it; and if the Sac is thin, that it may suppurate: but that in an old Hydrocele it is very seldom, if ever, digested, being left behind in a collapsed

* I am apt to imagine that the simple puncture more frequently produced a radical cure formerly, than it does now, from the manner of doing it. After puncture with a lancet, a canula was introduced to discharge the whole of the water. Now as the orifice in the Tunica Vaginalis would, in a small puncture, be liable to slip away from the orifice in the Scrotum, to prevent any difficulty on this occasion the puncture was directed to be made larger than we now make it; by which means air getting to the Tunica Vaginalis might produce the inflammation and abscess, which brought about the radical cure.

state round the Testicle. He thinks it may admit of a doubt, whether an inflammation, however excited, can bring a thick indurated Cyst, such as the Tunica Vaginalis becomes in an old Hydrocele, to adhere: in proof of which he mentions a case, where a caustic had been applied a fortnight before he saw it, and where the swelling, pain, and tension were so great, as made the surgeon justly suspect a Scirrhus; but upon dilating the Scrotum in its whole extent, the Tunica Vaginalis was seen to cohere very firmly with the integuments, but there was not the least adhesion betwixt the Cyst and Testicle in any part,

In the several methods which Mr. Pott has used, he declares, “the point to be aimed at is
 “to excite such a degree of inflammation both
 “in the Tunica Vaginalis and Tunica Albuginea,
 “as shall occasion a general and perfect cohesion
 “between them †.”

What effects may have been produced by the tent, canula, injection or incision, I will not pretend to say, because I have rarely seen them put in practice: but the method by caustic, which I have recommended, does not appear to me to

† On the Hydrocele, p. 176.

cure by producing a cohesion of the loose and immediate coats of the Testis, (nor do I think the other methods do) but by exciting such a supuration of the Tunica Vaginalis, as will cause the whole of it to slough away.

The long continued discharge of the sloughs after the Eschar of the Scrotum has fallen off, the hardness of the thickened inflamed Tunica Vaginalis lessening in proportion to the discharge of the sloughs, and the immediate cicatrization of the wound, as soon as the sloughs have ceased to come away, together with the laxity of the Scrotum afterwards, will satisfy any person that no adhesion has taken place with regard to the Testicle: for no indurated body can be found within the Scrotum, however thickened the Tunica Vaginalis might have been felt before the operation. Upon the most careful examination of the Scrotum after the cure by a small caustic, I never could perceive any adhesion of the teguments to the Testis, but in that particular spot where the caustic was applied, and there indeed it was pretty strong—And I think a careful attention must convince any unprejudiced person that Douglas's notion was groundless, when he supposes, that, after the use of the caustic, a part

of the Tunica Vaginalis remained collapsed about the Testicle.

In the foregoing pages, I flatter myself I have given the full weight to every objection that can be raised against the use of the caustic in this disease; some I have occasionally answered as I proceeded, and will now endeavour to obviate such as I have not yet particularly considered.

It has been said, that *the caustic does not always succeed*. But the same may be urged against the incision, or any other method which has been proposed, except the excision. Such instances however are very few, and the want of success was probably not to be imputed to the method: but supposing it true, it cannot be denied that the caustic is as certain as any other. I myself have never known one instance of its want of success; and am pretty certain, that whenever it reaches the Tunica Vaginalis, it is infallible.

Mr. Baker informed me, that he recollected two cases where it had failed; but the caustic had penetrated thro' the Scrotum in neither of them. One was a double Hydrocele, where the
caustic

caustic on one side produced a suppuration and discharge of the Cyst, but on the other did not reach the Tunica Vaginalis.—A second application of the caustic penetrated far enough, and produced a cure.

A gentleman of the profession told me, that he applied it once on the recommendation of Mr. Girle, when it failed of success: but afterwards revising the notes, which he had taken on the subject, he found that he had not suffered the caustic to lie on so long as he had been directed.

Another objection is, that *the caustic very rarely penetrates thro' the vaginal coat; and when it does not, the Tunica Vaginalis must be divided in the same state and manner, as if no caustic had been applied.* Mr. Pott gives this objection its full force in the following words: “The preference which
 “some practitioners give to this method (the
 “caustic) has been upon a supposition, that a
 “circumstance, which very seldom happens, will
 “most frequently occur; I mean the penetration
 “of the caustic thro' the vaginal tunic contain-
 “ing the fluid. I will not say that the caustic
 “never does this; but I must say that I have
 “very seldom seen it do so. If the tumour be
 “very large and full, the containing parts very
 I “much

“ much on the stress, and the skin and dartos very
 “ thin, the caustic may now and then penetrate
 “ thro’ to the vaginal coat, but this, whatever
 “ may be thought or pretended, very seldom
 “ happens. All the difference between the two
 “ methods (caustic and incision) will then amount
 “ to this, that in the former the skin being mor-
 “ tified, the patient is freed from a part of his
 “ apprehension at its being cut; and the surgeon
 “ fancying that his Escharotic has gone through
 “ the vaginal coat, will divide it as a part of
 “ the Eschar; but a more careful examination
 “ of what he is about, at the time of such ope-
 “ ration, would convince the latter that he di-
 “ vides the bag unaltered by the caustic*.”

I do agree with Mr. Pott, that the caustic does
 not always penetrate quite through the Tunica
 Vaginalis; but I believe, if it extends far enough
 to affect its external surface, it will produce an
 inflammation, which will extend through every
 part of it, and cause the whole Tunic to slough
 away.

An accident once convinced me of what Mr.
 Pott alludes to, relative to the apparent sound

* Pott on the Hydrocele, p. 156 and 157.

state of the Tunica Vaginalis sometimes after the action of the caustic.—When a very young practitioner, I applied the caustic to the Scrotum of a private patient labouring under a Hydrocele of the Tunica Vaginalis. As the integuments and Sac both appeared thin, I suffered it to lie on only four hours; on its removal I did not like the appearance of the Eschar, and feared the caustic had not penetrated far enough. In order to determine how far it had gone, I pushed a lancet gently into the Eschar, which passed thro' the dead part of the Scrotum without resistance; but having done this, I thought I felt underneath the Tunica Vaginalis found, and as far as I could judge by the touch, no way altered. This circumstance alarmed me much, as I feared the patient would have been subjected to the uneasiness of a second caustic: but, in less than twenty-four hours, I was relieved from my anxiety by perceiving a considerable tension of the Tunica Vaginalis, and observing the other symptoms, which indicate such an inflammation of the vaginal coat, as will produce its suppuration, and, in consequence of that, the radical cure. Accordingly the patient received a radical cure in less than six weeks, tho' the fever and colic pains were more considerable than they commonly

are, but never so violent as to make me apprehensive for his welfare.

From the appearances I have mentioned, I am satisfied that the penetration of the caustic quite through the Tunica Vaginalis is not essentially necessary for the cure. Nor indeed can there be any reason why a surgeon, who is persuaded of the superior advantages of the method by small caustic to that of incision, should think of dividing the Tunica Vaginalis in its whole extent: he will rather wait till the Eschar be sloughed off, and the wound healed up, and then apply a second caustic, which may be more efficacious.

Another objection to the caustic is, that *it gives more pain than the incision*. Mr. Pott says, "the pain attending the first application of the caustic is indeed to some persons but little, but in many it is fully equal to that of the knife, and must always be of longer duration*."

If it be acknowledged, which is really the fact, that the caustic to some people gives very little

* Ib. on the Hydrocele, p. 157.

pain, the dread of a cutting instrument is in general so great, that few patients would hesitate in preferring the first: neither is it to be conceived, that the pain of a caustic can equal that of the knife, for who then could suffer its long duration?

It has also been supposed that the caustic is preferred to the knife “ *because it requires no dexterity in the operator**.”

I must confess I cannot view it in that light: for the incision of the vaginal coat is so extremely easy, that neither it, nor the application of the caustic, merits the name of an operation. And I may venture to assert it will require more dexterity to prevent a caustic from spreading to a considerable distance on the Scrotum, than to make a simple division of the Tunica Vaginalis.

Mr. Pott objects to the removal of a piece of the Scrotum in the cure of this disease, even by caustic; *because he has often seen it prove troublesome to heal, and very apt to gall and fret after cicatrization*†.

* Pott on the Hydrocele, p. 158.
 † Letter to Mr. Douglas at the end of Treatise on Hydrocele.

What may have been the case when a large caustic has been applied, I cannot say; but in every instance, where I have seen a small caustic used, the ulcer made by it healed up as kindly after the sloughs came away, and the cicatrix stood as firm, as it would have done if the caustic had been applied in any other part of the body.

I hope I have fairly stated and answered the strongest objections against the use of the Caustic in this disease; and that, by what I have said, it appears few of them can be urged effectually against the mode of caustic, which has been recommended.

Upon the whole, if the disagreeable symptoms, which attend the incision, excision, and large caustic, are principally derived from the exposure and irritation of the Testicle, we can easily account for the favourable and mild appearances in the method by small caustic, where these accidents are so much guarded against, by not dividing the Eschar, nor puncturing the Tunica Vaginalis, till it is ready to slough away.

I have noted down, for some years past, such cases

cases as were treated for the radical cure in St. Thomas's Hospital, which have fallen within my knowledge, though many were cured of whom I never heard. There is so much similitude between them, that a long detail would be neither instructive nor entertaining. I shall then only subjoin two cases, in which there appears to be the greatest variety.

C A S E I.

Mordecai Dunton, of Deptford; aged forty-eight, was admitted into St. Thomas's Hospital in November 1765. He was of a thin habit, and had enjoyed very good health his whole life. In the preceding May he had received a blow upon the Scrotum by a fall. About a month afterwards he perceived a swelling on the right side of the Scrotum, which proved a true Hydrocele, and gradually increased, appearing to contain about a pint of fluid on the 23d of November, when, without any previous preparation, Mr. Baker ordered a caustic to be laid upon the inferior and anterior part of the Scrotum, which was suffered to lie on between five and six hours.

Nov. 24th. On removing the dressings, the
caustic

caustic appeared to have acted very well. The Eschar had nearly a circular form, and seemed to be about two inches diameter. The patient was perfectly free from fever, and void of all complaints.

On the 25th the patient continued in the same state, excepting a slight pain in his back, which he imagined proceeded as much from lying in bed, as from the caustic. He had no feverish heat, and a good appetite.

On the 26th he continued to complain of some pain in his back, which he still attributed to lying in bed: his pulse at this time was somewhat quickened, and his tongue white.

On the 27th he had the same complaints, with nearly the same degree of fever, but retained his appetite.

On the 28th he continued to feel the same slight pain passing from the Eschar to the loins: he had slept well in the night, and was quite free from fever.

On the 29th and 30th, and Dec. 1st, much the same.

Dec.

Dec. 2. He found himself easier. The Eschar of the Scrotum had entirely sloughed off, and the Tunica Vaginalis appeared underneath much loosened and ready to separate.

From Dec. 2, to the 6th, he was sometimes feverish, and at other times quite free from fever, and complained of his usual pain; but still thought it would go off, if he was suffered to walk as much as he chose. At this time the Tunica Vaginalis in its sloughy state projected considerably through the integuments, and looked as if it would soon burst.

On the 7th he had griping pains, and water appeared to be discharged in the poultice.—His pains went off on having a stool.

From the 7th to the 16th the water continued discharging; the sloughs projecting through the orifice of the Scrotum, and growing more and more loose; the size of the Scrotum at the same time gradually decreasing. From this time the man was allowed to walk about the ward, shaved the patients, and performed other little offices.

On Jan. 23. he was discharged perfectly
K and

and radically cured. The application used to the Scrotum, from the removal of the caustic till within a few days of the cicatrization of the wound, was a cataplasm of oatmeal made with the common fomentation of the Hospital.

C A S E II.

In March 1769, David Burke was admitted into St. Thomas's Hospital. He could not exactly tell his age, but believed he was about thirty, tho' he appeared older. He was apparently free from any other complaint, and seemed in good health. He had a Hydrocele of the Tunica Vaginalis on the right side. The water had never been discharged; but Mr. Smith and Mr. Martin, as well as myself, judging it to be a proper case, I applied, Mar. 23. a Caustic towards the bottom of the Scrotum on the fore part. Previous to its application, I made a circular mark with ink, about the bigness of a sixpence, as a direction for its size; but notwithstanding the great care I took, it formed an Eschar somewhat larger than an half-crown piece. It was suffered to lie on six hours.

On

On the 24th he was quite easy.

25th, He said he had some fever in the night, and complained of pain in his back, which however was not much greater than he had been used to feel from the weight of the tumour. From the first removal of the caustic, the Tunica Vaginalis, under the teguments of the Scrotum, felt thicker and harder than before its application; and this feeling sensibly increased. The integuments appeared inflamed round the Eschar, but no where else.

26th, He had slept little in the night, complained of pain, which shot up into the loins in the course of the spermatic vessels: no remarkable inflammation about the Eschar nor any part of the Scrotum. A clyster, which I had directed the night before to relieve his colicky pains, had not been given; the nurse conjecturing it was not necessary, as he had passed two or three stools. His tongue at this time was white and furr'd, but his pulse not quickened. I ordered him to lose eight ounces of blood, and a large clyster to be immediately injected. About six o'clock the same afternoon I found him greatly easier, tho' his pulse was

quicker and fuller, and he was sitting up in bed eating veal and potatoes. I advised him to desist; and directed another clyster at night, and an opiate draught.

On the 27th he was quite easy, and his pulse quiet. I ordered another clyster in the evening. From this time he had no medicines, except a clyster once prescribed when he was costive, and he lived on the common diet of the hospital.

Apr. 3. Observing that the Eschar of the Scrotum had entirely sloughed away, and that of the Tunica Vaginalis began to loosen and project, I made a small puncture with a lancet, and discharged some of the water. From this time the Scrotum gradually diminished in bulk, the sloughs coming away daily; and he was discharged perfectly cured on the 27th of April.

In June following he returned to the hospital with some venereal eruptions, for which he was salivated and cured. I took this opportunity, as I had done frequently in other patients, of examining his Scrotum, and could not perceive any

remains of indurated Tunica Vaginalis, nor any adhesion to any part of the Testicle, save the particular spot where the caustic had been applied *.

The best practical writers advise, that particular attention be paid to the habit and age of
of

* Having cured another person of the disease since this little Essay was finished, it may not be improper to add the case, as so many persons now in London were witnesses to it.

George Holliday, aged sixty-two, who in other respects had always enjoyed a firm state of health, and had been constantly accustomed to work in the open air, was admitted, Aug. 31, 1769, into St. Thomas's Hospital for an Hydrocele on each side of the Scrotum. That on the right side was largest, and appeared to contain about a pint of water. He said it had been coming four years, and he imagined it to have proceeded from a blow upon the groin. That on the left side was about half the bulk of the other, and had been perceptible only two months.

On Sept. 7. I laid two caustics on the Scrotum, in the manner I before directed, of about the size of a sixpence, and suffered them to remain nine hours. Upon their removal, each Eschar extended to the dimensions of a half-crown piece.

On the 8th common basilicon was applied to the Eschar, and having had no stool for two days, his body was opened by some lenitive infusion.

of the patient, whenever the radical cure is to be attempted by incision, excision, or large caustic ;

9th and 10th, He remained perfectly easy, no tension having come upon the Scrotum, which was carefully suspended ; and he was suffered to walk about the ward, but not to go out.

On the 11th he said he had some fever in the night, but his pulse was then perfectly calm. This day I began to perceive a tension on both sides, tho' it was not considerable, yet more evident on the left than the right side. He passed two or three loose stools, which were checked by a dose of rhubarb.

On the 12th he was easy. The Tunica Vaginalis felt somewhat harder. He complained of a slight cough from catching cold, for which he had a pectoral linetus. As he desired the Scrotum to be kept warm, I ordered the dressings to be laid aside, and the fomentation poultice to be applied immediately upon the Eschar.

On the 13th his cough was gone, and he had no pain. The Eschars began to loosen, and the hardness of the Tunica Vaginalis on each side to increase ; but not to that degree which I had reason to expect from the time the caustic was suffered to lie on.

14. His cough quite gone.

On the 15th perfectly easy.

16. He complained of slight twitches in his bowels. The Eschar was loose, and a small quantity of water was discharged in the poultice.

caustic ; and forbid it in old age; or where the habit is complicated with some other disease.

Upon looking over my notes, the oldest patient who has lately applied for the radical cure of this disease is sixty-three ; but I can very well remember

17. Quite easy.

19. He complained much of a purging ; but upon examination his uneasiness arose from colicky pains, and frequent motions to stool, with trifling evacuations ; so that upon the injection of a clyster, which was followed by a copious stool, he was entirely relieved.

On the 24th I was told the Scrotum had burst on one side, and the water was in part discharged ; and upon examining it I perceived a bladder-like appearance projecting out of the hole in the Scrotum, on the right side, which I snipped with a pair of scissars, and discharged some water. This was the Tunica Vaginalis not sufficiently affected by the caustic, which I had for some days suspected to be the case, because the hardness of the Tunica Vaginalis did not come on so soon, nor was so remarkable, as in every other patient I had seen. He complained of some colicky pains, which were relieved by a clyster.

On the 25th the same bladder-like appearance was observable on the left side ; upon which I dipped some lint in a solution of lunar caustic and applied it to the Tunica Vaginalis on both sides, and afterwards ordered a solution of the common caustic to be applied in like manner every day when

remember that Mr. Girle never declined it upon account of age simply, if the Scrotum and general habit were free of other diseases; and that people more advanced in life have received a cure with equal ease as the younger. Mr. Baker has assured me, that he has succeeded as well in men of four-score as those of forty.

when the poultice was changed; and this occasioned neither fever nor pain.

In about a week I was satisfied that the caustic had sufficiently affected the Tunica Vaginalis on each side, from the proper hardness which came on, and the Eschars having the same appearance which they always have when the caustic has done its duty. From this time the sloughs began to come away, the cure went on as usual, and Oct. 30 the wounds were cicatrized; altho' during the last ten days he caught an ulcerous sore throat from a patient who came with this disease into the same ward; but of this he was soon relieved by Dr. Greive, who had carefully attended to the whole process for the cure of this double Hydrocele; and never found his pulse in the least quicker than before the operation, till he was seized with the sore throat.



E N D.

